JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2024

MSc. – Ist Semester (BT)

COURSE CODE (CREDITS):20MS1PH111(2)   MAX. MARKS: 25

COURSE NAME: Basics of Physics and Chemistry

COURSE INSTRUCTORS: Dr. Poonam/Dr. Ragini   MAX. TIME: 1 Hour 30 Minutes

Note: (a) *All questions are compulsory.*

(b) *The candidate is allowed to make Suitable numeric assumptions wherever required*

for solving problems

Q.No	Question	Marks
Q1	Classify the waves (i) by what they move through (ii) how medium vibrates	(2 X 1=2]
Q2(a)	Explain any four properties of waves with suitable diagram.	2
(b)	What is simple harmonic motion and what are the required conditions for it?	2
Q3(a)	State the first and second Fick's law of diffusion with equations?	2
(b)	Discuss diffusion controlled release.	2
Q4.	The cone of a loudspeaker oscillates in SHM at a frequency of 262 Hz. The amplitude at the center of the cone is $A = 1.5 \times 10^{-4}$ m, and at $t = 0$, $x = A$. (a) What equation describes the motion of the center of the cone? (b) What are the velocity and acceleration as a function of time? (c) What is the position of the cone at $t = 1.00$ min (= 1.00×10^{-3} s)?	2
Q5(a).	How does physisorption compare to chemisorption?	3
(b).	What are cohesive and adhesive forces in surface tension?	2
Q6(a)	How Henry's Law contributes towards solubity?	2
(b)	If a solution contains 15 grams of sodium sulphate and the volume comes out to be 125 millilitres. What is the molarity of the given solution?	2
Q7	Elaborate the classifications of polymers.	4